



BLACK&DECKER®

Bullet

Pilot-Point™ Drill Bit

Care and Maintenance Guide



Bullet™ Pilot Point™ Drill Bits

Use and Care Guide

Black & Decker talked to many users of conventional drill bits and uncovered the need for a better performing drill bit.

The problems associated with conventional drill bits are:

- Conventional drill bits were designed over 100 years ago for use with drill presses for manufacturing and production.
- Portable drills (cordless and electric) have evolved and advanced through technical innovation while the drill bit has not changed.
- Most conventional bits walk on metal.
- Requires a center punch for accurate drilling.
- Extrudes metal resulting in lock-up at breakthrough.
- Produces burrs in metal, splintering in wood.
- Requires substantial force when drilling.
- Conventional drill bits have unsatisfactory life performance.

After discovering this user need, Black & Decker dedicated a team of engineers to develop new drill bit technology. This research led to a major innovation...a new drill bit that solves the problems associated with conventional drill bits.



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Pilot-Point Drill Bit

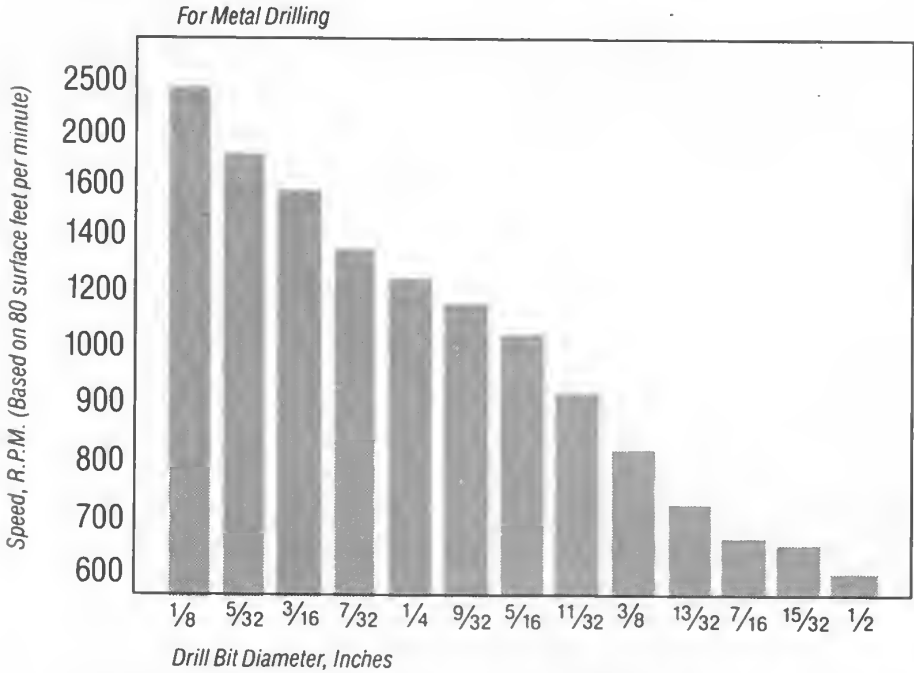
- Lasts up to 7 times longer than ordinary bits.
- Drills up to 4 times faster in metal.
- Drills precise holes with minimal burrs.
- No center punch is required.
- Minimizes walking.
- Prevents binding or lock-up at breakthrough.
- Requires less force than ordinary bits.
- Reduces splintering in wood.
- Drills more holes per charge with cordless drills.

The proper use and care of Bullet™ Pilot Point™ drill bits is important, if you are to realize the many benefits from this innovative design.

This guide includes:

- I. Recommended drilling speeds chart for drilling in metal.
- II. Recommended lubrication chart for drilling in different materials.
- III. Recommendations when drilling with Bullet™ drill bits.
- IV. Resharpening procedure.
- V. Helpful hints on drilling and tips for safe operation.

I. Recommended speeds for drilling with any HSS drill bit.



Example: 1/2" Diameter drill bit should be run at 600 RPM.

Speeds may be increased when drilling wood, composites, plastics, etc.

II. Recommended lubrication for drilling with any HSS drill bit.

Proper lubrication can greatly enhance drill bit life, cutting action, accuracy and hole quality. All but a few materials require some form of lubrication or cutting fluid for best performance. When drilling in the following material, use the recommended lubrications:*

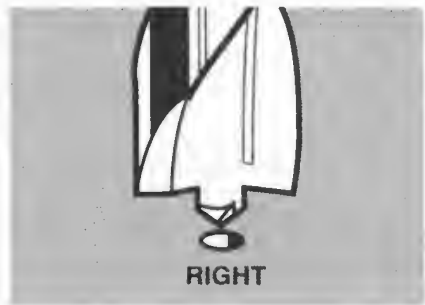
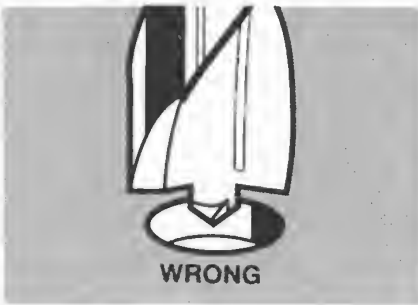
Material	Lubricant
Aluminum	Kerosene, cutting fluid
Brass	Cutting oil, kerosene
Bronze	Cutting oil, kerosene
Cast Iron	Dry
Copper	Cutting oil, cutting fluid
Plastics	Dry
Steel	Cutting oil, cutting fluid
Wood	Dry
Wrought Iron	Cutting oil, cutting fluid

*If cutting oil is not available, you may use S.A.E. 20 motor oil or a light machine oil.

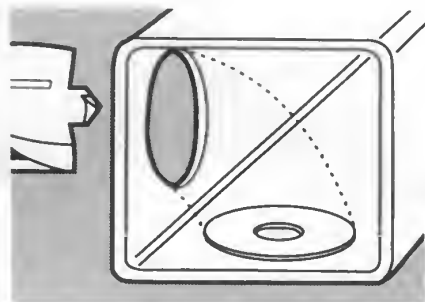
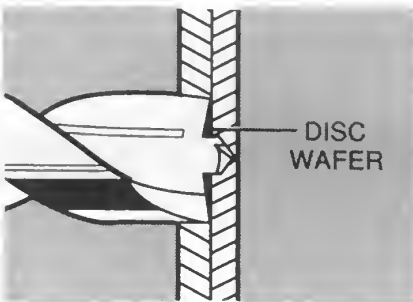
III. Drilling conditions for consideration.

The user of Black & Decker Bullet™ Pilot Point™ drill bits will realize many benefits from this new design. It is important, however, to note that there are some conditions to consider for best performance. They are...

(1) The Bullet™ bit is not designed to enlarge existing holes when the diameter of the hole is larger than the Pilot Point™ tip. The bit will not function correctly and should not be used. A Black & Decker conventional drill bit should be used for this task. However, if the existing hole is smaller in diameter than the Bullet™ bit's tip, the task of hole enlargement is easily solved.



(2) The unique cutting action of the Bullet™ Pilot Point™ drill bit produces precise, accurate holes with minimal burrs, resulting in a disk or wafer. Drilling various structure types, such as square tube, channel, pipe, etc. may require the removal of this disk prior to entering the second wall. Most times removal of this disk will not be required. It will simply fall from the bit tip as the bit is withdrawn from the hole being drilled. If the disk does not fall free from the Bullet™ bit, it will require physical removal. The disk is likely to be hot as well as sharp, and caution should be used when removing.



(3) When drilling multiple layers of metal, this disk or wafer can interfere with drilling beyond the first layer of metal. This interference can be alleviated by withdrawing the bit after drilling through each layer and removing the disk or wafer. The Bullet™ bit is likely to be hot and caution should be used when removing this disk.

A better understanding of these conditions should yield a high level of satisfaction. The use of Bullet™ Pilot Point™ drill bits should result in better hole quality, enhanced drilling efficiencies and safer drilling conditions for the operator.

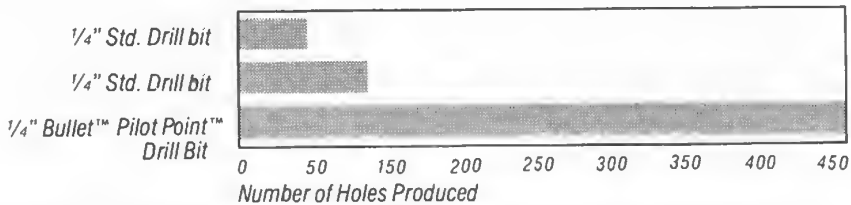
(4) Use Black & Decker cobalt drill bits for extended life when drilling in stainless steel, heat-treated or other difficult to drill materials.

IV. Resharpener Bullet™ Pilot Point™ drill bits.

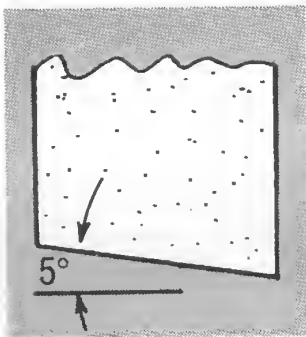
The Bullet™ Pilot Point™ drill bit is extremely sharp and accurate. Due to the unique design, the Bullet™ Pilot Point™ bit will drill up to *4 times faster* in metal than an ordinary drill bit and will *last up to 7 times longer*.

Example: When drilling in 1/4" thick 1018 cold-rolled steel at 60 lbs. pressure.

(2) 1/4" conventional drill bits vs. 1/4" Bullet™ bit.

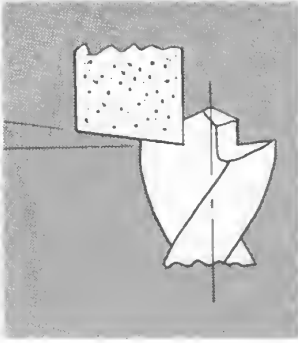


Bullet™ Pilot Point™ drill bits can be resharpened by the following “touch-up” procedure. This touch-up procedure applies to Bullet™ Pilot Point™ drill bits that have been used properly. Improper usage of Bullet™ Pilot Point™ drill bits resulting in excess wear, chipping or breakage may not be applicable to the following procedure. The Bullet™ bit should be replaced or it can be totally repointed to a conventional point drill bit.



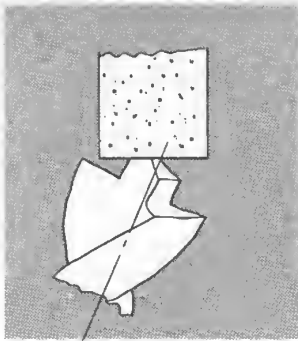
“Touch-Up Procedure”

Step One - Dress grinding wheel to a sharp corner with approximately 5° taper right to left. Front to back clearance on drill bit is 12°.



Step Two - Utilize this dressed corner and the wheel edge to position upswept lip surface on the face of the grinding wheel. Roll bit and duplicate for opposite cutting edge. Be careful not to damage the Pilot Point™ tip when aligning it to the wheel.

Note: Grind and clean up any visible dulling, maintaining the original shape as closely as possible while removing equal amounts from both sides.



Step Three - Dress grinding wheel to original square shape for touch-up of primary Pilot Point™ tip.

Step Four - Angle the bit to match the original shape. Roll bit and duplicate for the opposite edge, while removing equal amounts.

Note: Grind only to clean up any visible dulling while maintaining the original pilot angle and clearance.

If you are not comfortable with or familiar with the use of a Bench Grinder, the above touch-up procedures should not be utilized.

V. Helpful Hints & Safety Tips

- Always apply pressure directly in line with the drill bit.
- Always maintain a firm footing and anticipate breakthrough.
- Always unplug drill or remove battery pack while chucking and unchucking bits.
- Always remember to remove chuck key.
- Clamp workpiece and keep hands free from drilling area.
- When drilling deep holes, occasionally withdraw bit to clear flutes.

WARNING: To minimize the risk of eye injury, always use eye protection.

Bullet™ Pilot Point™ drill bits are available in 1/8" through 1/2" diameter sizes.



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Available in three distinctive product lines.

High Speed Steel Bright Finish Bullet™ Bits

- Individual bits, available carded or bulk, in sizes from 1/16" to 1/2" in 1/64" increments*
- 8-, 11- and 14-piece sets packaged in convenient, reusable storage cases
- 21- and 29-piece sets packaged in rugged metal storage boxes that convert into self-standing drill bit holders

Black Oxide-Coated Bullet™ Bits

- 29 fractional jobber length sizes, available in bulk, from 1/16" to 1/2" in 1/64" increments*
- 13-, 21- and 29-piece sets packaged in durable metal index boxes

Titanium-Coated Bullet™ Bits

- 16 fractional sizes available carded*
- 8-piece set packaged in pocket-sized storage case

*Bullet™ Pilot Point™ Drill Bits can only be manufactured in 1/8" to 1/2" diameters. 1/16" to 7/64" sizes have 135-degree split point tips.



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